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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,722	08/13/2003	Hung-Jen Wei	ACMP0068USA	1721

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MERRIFIELD, VA 22116

EXAMINER	
BLACKMAN, ROCHELLE ANN J	

ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,722	WEI ET AL.	
	Examiner	Art Unit	
	Rochelle Blackman	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

1. Claims 12 and 15 are objected to because of the following informalities: Claim 12 recites the limitation "the acute angle" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. In claim 15, line 28, "a" before "invisible-light" should be - -an- -.

Appropriate correction is required.

2. Claim 7 is objected to because according to description of the "image module" and/or content of the "image module" recited in claim 6, the "image module" can only be a "digital micro-mirror device" and not a "liquid crystal panel".

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 8, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shikama, U.S. Patent No. 5,671,993.

Regarding claims 1, 2, and 8, Shikama discloses an "image projection system"(see Figs. 58a-b) comprising: a "light source for generating a light beam"(see 120 of Figs. 58a-b); a "reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see 130 of Figs. 58a-b); and an "invisible-light reflector installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing"(see 131 of Figs. 58a-b and col. 34, lines 49-53), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space"(the "predetermined angle" is equal to 0 degrees); "wherein the reflective housing is an elliptic reflective housing, and the light source is installed at a focal point of the elliptic reflective housing, and the optical path is a major axis of the elliptic reflective housing; wherein the reflective housing is a parabolic reflective housing, and the optical

path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing"(see 130 of Figs. 58a-b).

Regarding claims 15 and 16, Shikama discloses an "image projection system"(see Figs. 58a-b) comprising: a "light source for generating a light beam"(see 120 of FIGS. 5a-b); a "parabolic reflective housing comprising an opening, the parabolic reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see 130 of Figs. 58a-b and col. 34, lines 49-53); and a "invisible-light reflector installed at a reflecting position intersecting the optical path outside the opening of the reflective housing"(see 131 of Figs. 58a-b), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space, and then the invisible light will focus on a predetermined heat-dissipation position away from the focal point"(the "predetermined angle" is equal to 0 degrees); "wherein the invisible-light reflector can be used to reflect infrared rays or ultraviolet rays of the light beam"(see col. 34, lines 49-53).

2. Claims 1, 2, 8, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al., U.S. Patent No. 6,111,700.

Regarding claims 1, 2, and 8, Kobayashi discloses an "image projection system"(FIG. 68-71) comprising: a "light source for generating a light beam; a reflective housing comprising an opening, the reflective housing forming an accommodating

space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see 11 of FIG. 68); and an "invisible-light reflector installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing"(see 302A, 302B of FIGS. 68, 69, and 71), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space"(see 302A, 302B of FIG. 71 and col. 37, lines 10-22 – the "predetermined angle" is considered to be an acute angle not equal to 0 degrees); "wherein the reflective housing is an elliptic reflective housing, and the light source is installed at a focal point of the elliptic reflective housing, and the optical path is a major axis of the elliptic reflective housing; wherein the reflective housing is a parabolic reflective housing, and the optical path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing"(see 11 of FIG. 68).

Regarding claims 15 and 16, Kobayashi discloses an "image projection system"(see FIGS. 68-71) comprising: a "light source for generating a light beam; a parabolic reflective housing comprising an opening, the parabolic reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see 11 of FIG. 68); and a "invisible-light reflector installed at a reflecting position intersecting

the optical path outside the opening of the reflective housing"(see 302A, 302B of FIGS. 68, 69, and 71), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space, and then the invisible light will focus on a predetermined heat-dissipation position away from the focal point"(see 302A, 302B of FIG. 71 and col. 37, lines 10-22 – the "predetermined angle" is considered to be an acute angle not equal to 0 degrees); "wherein the invisible-light reflector can be used to reflect infrared rays or ultraviolet rays of the light beam"(see "invisible reflector" 302A, 302B of FIGS. 68, 69, and 71).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6-9, and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Li, U.S. Patent Application Publication No. 2003/0063261.

Regarding claims 1, 2, 6, and 7, Li discloses an "image projection system"(see FIG. 1-11) comprising: a "light source for generating a light beam"(see 808 of FIG. 8); a "reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so

that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(see small reflector to the right of "light source" 808); and an "invisible-light reflector installed at a reflecting position intersecting with the optical path outside the opening of the reflective housing"(see 886 of FIG. 8), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space"(the predetermined angle is equal to 0 degrees); "wherein the reflective housing is an elliptic reflective housing, and the light source is installed at a focal point of the elliptic reflective housing, and the optical path is a major axis of the elliptic reflective housing"(see small reflector to the right of "light source" 808); "wherein the image projection system further comprises an image module, the image module comprising a plurality of controllable optical reflectors for modulating the light beam passing through the invisible-light reflector to generate a projecting beam containing an optical image, wherein the light beam passing through the invisible-light reflector does not comprise the infrared rays; wherein the image module is a digital micro-mirror device or a liquid crystal panel"(see 664 of FIG. 6 and pg. 4, paragraph [0049]); "wherein the reflective housing is a parabolic reflective housing, and the optical path is a parallel route by which the light beam propagates after being reflected by the parabolic reflective housing"(see small reflector to the right of "light source" 808).

Regarding claims 9, 13, and 14, Li discloses an "image projection system"(see FIGS. 1-11) comprising: a "light source for generating a light beam"(see 808 of FIG. 8);

an "elliptic reflective housing comprising an opening, the reflective housing forming an accommodating space, the light source installed inside the accommodating space so that the light beam generated by the light source substantially propagates along a major axis of the elliptic reflective housing through the opening away from the accommodating space"(see small reflector to the right of "light source" 808); an "image module comprising a plurality of controllable optical reflectors for modulating the light beam to generate a projecting beam containing an optical image"(see 664 of FIG. 6 and pg. 4, paragraph [0049]); and an "invisible-light reflector installed between the reflective housing opening and the image module and at a reflecting position at which the invisible-light reflector intersects the major axis of the elliptic reflective housing"(see 886 of FIG. 8), a "normal of the invisible-light reflector and the major axis intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space"(the predetermined angle is equal to 0 degrees); "wherein the image module is a digital micro-mirror device or a liquid crystal panel"(see 664 of FIG. 6 and pg. 4, paragraph [0049]); "wherein the light source, the reflective housing, and the invisible-light reflector form an integral structure"(see "light source" 808, see small reflector to the right of "light source" 808, and "invisible-light reflector 886 of FIG. 8).

Regarding claims15 and 16, Li discloses an "image projection system"(see FIGS. 1-11) comprising: a "light source for generating a light beam"(see 808 of FIG. 8); a "parabolic reflective housing comprising an opening, the parabolic reflective housing forming an accommodating space, the light source installed inside the accommodating

space so that the light beam generated by the light source substantially propagates along an optical path through the opening away from the accommodating space"(ee small reflector to the right of "light source" 808); and a "invisible-light reflector installed at a reflecting position intersecting the optical path outside the opening of the reflective housing"(see 886 of FIG. 8), a "normal of the invisible-light reflector and the optical path intersecting to form a predetermined angle so that invisible light of the light beam emitted from the opening will be reflected back into the accommodating space, and then the invisible light will focus on a predetermined heat-dissipation position away from the focal point"(the predetermined angle is equal to 0 degrees); "wherein the invisible-light reflector can be used to reflect infrared rays or ultraviolet rays of the light beam"(see 886 of FIG. 8 and pg. 5, paragraph [0057]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama, U.S. Patent No. 5,671,993 as applied to claim 1 above, and further in view of Kobayashi et al., U.S. Patent No. 6,111,700.

Shikama discloses the claimed invention except for the predetermined angel formed by the normal of the invisible-light reflector and the optical path is an "acute

angle not equal to zero degrees" and "wherein the acute angle is smaller than 45 degrees".

Kobayashi discloses leakage of UV components from U-V cut filter 302 is reduced substantially by tilting UV-cut filter 302a and 302b in projector 350 (see FIGS. 68-71 and col. 37, lines 19-22).

It would have been obvious to one of ordinary skill in the art at the time invention was made to tilt the "invisible-light reflector" of the "image projection system" in Shikama reference, as taught by Kobayashi in order to reduce the leakage of the infrared rays from the "invisible-light reflector".

2. Claims 3-5 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li, U.S. Patent Application Publication No. 2003/0063261 as applied to claims 1 and 9 above, and further in view of Kobayashi et al., U.S. Patent No. 6,111,700.

Li discloses the claimed invention except for the predetermined angel formed by the normal of the invisible-light reflector and the optical path is an "acute angle not equal to zero degrees" and "wherein the acute angle is smaller than 45 degrees".

Kobayashi discloses leakage of UV components from U-V cut filter 302 is reduced substantially by tilting UV-cut filter 302a and 302b in projector 350 (see FIGS. 68-71 and col. 37, lines 19-22).

It would have been obvious to one of ordinary skill in the art at the time invention was made to tilt the "invisible-light reflector" of the "image projection system" in Li

reference, as taught by Kobayashi in order to reduce the leakage of the infrared rays from the "invisible-light reflector".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

JUDY NGUYEN
PRIMARY EXAMINER